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PLASMA TV SERVICE MANUAL

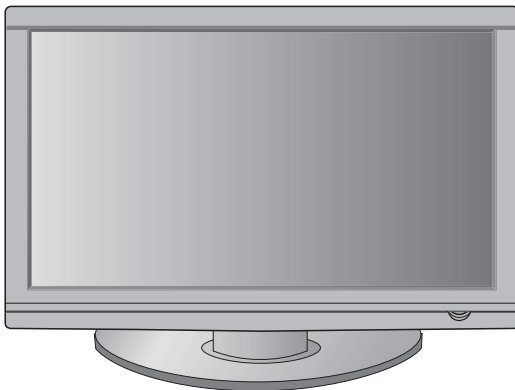
CHASSIS : PD82A

MODEL : 42PG3500

42PG3500-ZA

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by \triangle in the Schematic Diagram and Exploded View.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this monitor is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by it's Neck.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between $1M\Omega$ and $5.2M\Omega$.

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

Do not use a line Isolation Transformer during this check.

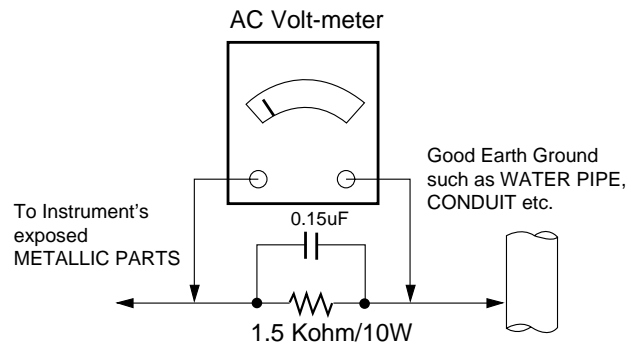
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



SPECIFICATIONS

NOTE : Specifications and others are subject to change without notice for improvement.

√ Application Range

This spec is applied to the PLASMA TV used PD82A Chassis.

Chassis	Model Name	Market	Brand	Remark
PD82A	50PG6500 42PG6500 50PG4500 50PG7500 42PG3500 50PG3500 42PG2500 50PG2500	France	LG	

√ Specification

Each part is tested as below without special appointment.

- 1) Temperature : 25±5°C (77±9°F), CST : 40±5
- 2) Relative Humidity: 65±10%
- 3) Power Voltage: Standard Input voltage (100-240V~, 50/60Hz)
* Standard Voltage of each product is marked by models.
- 4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with SBOM.
- 5) The receiver must be operated for about 20 minutes prior to the adjustment.

√ Test Method

- 1) Performance : LGE TV test method followed.
- 2) Demanded other specification
Safety : CE, IEC specification
EMC : CE, IEC

Model	Market	Appliance	Remark
50PG6500 42PG6500 50PG4500 50PG7500 42PG3500 50PG3500 42PG2500 50PG2500	France	Safety : IEC/EN60065 EMI : EN55013 EMS : EN55020	TEST

√ Module General Specification

1. 42" Module

No	Item	Specification	Remark
1	Display Screen Device	42 inch Wide Color Display Module	PDP
2	Aspect Ratio	16:9	
3	PDP Module	PDP42G1####, RGB Closed Type, Glass Filter	
4	Operating Environment	1)Temp. : 0~40deg 2)Humidity : 20~80%	LGE SPEC.
5	Storage Environment	3)Temp. : -20~60deg 4)Humidity : 10~90%	
6	Input Voltage	100-240V~, 50/60Hz	Maker LG

2. 50" XGA Module

No	Item	Specification	Remark
1	Display Screen Device	50 inch Wide Color Display Module	PDP
2	Aspect Ratio	16:9	
3	PDP Module	PDP50PG1####, RGB Closed Type, Glass Filter	
4	Operating Environment	1)Temp. : 0~40deg 2)Humidity : 20~80%	LGE SPEC.
5	Storage Environment	3)Temp. : -20~60deg 4)Humidity : 10~90%	
6	Input Voltage	100-240V~, 50/60Hz	Maker LG

3. 50" FHD Module

No	Item	Specification	Remark
1	Display Screen Device	50 inch Wide Color Display Module	PDP
2	Aspect Ratio	16:9	
3	PDP Module	PDP50H2####, RGB Closed Type, Glass Filter	
4	Operating Environment	1)Temp. : 0~40deg 2)Humidity : 20~80%	LGE SPEC.
5	Storage Environment	3)Temp. : -20~60deg 4)Humidity : 10~90%	
6	Input Voltage	100-240V~, 50/60Hz	Maker LG

√ **Model General Specification**

No	Item	Specification	Remark
1	Market	France	
2	Broadcasting system	1) PAL-BG 2) PAL-DK 3) PAL-I,I' 4) DVB-T(ID TV) 5) SECAM-L/L'	
3	Receiving system	Analog : Upper Heterodyne Digital : COFDM	
4	Scart Jack (2EA)	PAL, SECAM	
5	Video Input (1EA)	PAL, SECAM, NTSC	4 System : PAL, SECAM, NTSC, PAL60
6	S-Video Input (1EA)	PAL, SECAM, NTSC	4 System : PAL, SECAM, NTSC, PAL60
7	Component Input (1EA)	Y/Cb/Cr, Y/Pb/Pr	
8	RGB Input(1EA)	RGB-PC	
9	HDMI Input(4EA)	HDMI-DTV & SOUND	
10	Audio Input (3EA)	PC Audio, Component, AV	L/R Input

ADJUSTMENT INSTRUCTION

1. Application Object

These instructions are applied all of the PLASMA TV,
PD82A Chassis.

2. Note

- (1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
 - (2) Adjustment must be done in the correct order.
 - (3) The adjustment must be performed in the circumstance of $25\pm5^{\circ}\text{C}$ of temperature and $65\pm10\%$ of relative humidity if there is no specific designation.
 - (4) The input voltage of the receiver must keep 100-240V~, 50/60Hz.
 - (5) The receiver must be operated for about 5 minutes prior to the adjustment.
- After RGB Full white HEAT-RUN Mode, the receiver must be operated prior to adjustment.
 - Enter into HEAT-RUN MODE
 - 1) Press the POWER ON KEY on R/C for adjustment.
 - 2) OSD display and screen display PATTERN MODE.
 - * Set is activated HEAT-RUN without signal generator in this mode.
 - * Single color pattern(RED/BLUE/GREEN) of HEAT-RUN mode uses to check PANEL.

If you turn on a still screen more than 20 minutes, (Especially digital pattern, cross hatch pattern) after image may be occur in the black level part of the screen.

3. ADC Calibration

* Using 'power on' button off the control R/C, power on TV.

√ Auto adjustment Map(RS-232C)

NO	Item	CMD1	CMD2	Data 0	Remark
ADC adjust	ADC adjust	A	D	1 0	
Data Read	ADC Parameter	A	D	2 0	Transfer 18Byte (Input resolution Data)
	Digital Data	A	D	3 0	
Default Write	ADC Parameter	A	D	4 0	
	(Average)				
	Adjustment Confirmation	A	D	9 0	To check ADC Adjustment on Assembly line
Enter Adjust Mode	Adjust Mode In	A	D	0 0	When transfer the 'Mode In', Carry the command.
	Adjust Mode Off	A	D	9 0	

- Baud : 115200bps, RS232 Host : PC, Echo : none.

ADC	AV		Component	RGB-PC
MSPG925FS	PAL		Model:215(720P) Pattern : 65 * 720P/50Hz 7 Color Bar	Model : 3 (1024*768 60Hz) Pattern : 65 7 Color Bar
	INPUT SELECT	AV3		
	Model : 202 (PAL-BGDHI) Pattern : 65 * PAL 7 Color Bar			

4. Adjustment of AV Color Balance

4-1. Standard Equipment

: 802F Pattern Generator. Master Pattern Generator(MSPG-925, etc) or same product.

4-2. Required Equipment

- Remote controller for adjustment.
- MSPG-925FS Pattern Generator. (Which has Video Signal: 7 Color Bar Pattern shown in Fig.1)
-> Model: **202** / Pattern: **65** EC and FC model use PAL-BGDHI(composite signal)

- (1) Input the Video Signal: 7 Color Bar signal into AV3.
- (2) Set the PSM to Dynamic mode in the Picture menu.



(Fig.1) 7 color Bar signal

- (3) Press **IN-START** key on R/C for adjustment.
- (4) Press the **G(Vol. +)** key to operate the set, then it becomes automatically.

5. Adjustment of Component

5-1. Standard Equipment

: 802F Pattern Generator. Master Pattern Generator(MSPG-925, etc) or same product.

5-2. Required Equipment

- Remote controller for adjustment.
- MSPG-925FS Pattern Generator. (Which has Video Signal: 7 Color Bar Pattern shown in Fig.2)
-> Model: **202** / Pattern: **65** EC and FC model use PAL-BGDHI(composite signal)

- (1) Input the Component 720p/50Hz 7 color Bar Pattern(MSPG-925FS model : 215, Pattern : 65) signal into Component.
- (2) Set the PSM to Dynamic mode in the Picture menu.



(Fig.2) 7 color Bar signal

- (3) Press **IN-START** key on R/C for adjustment.
- (4) Press the **G(Vol. +)** key to operate the set, then it becomes automatically.
- (5) Auto-RGB OK means the adjustment is completed.

6. Adjustment of RGB

6-1. Standard Equipment

: 802F Pattern Generator. Master Pattern Generator(MSPG-925, etc) or same product.

6-2. Required Equipment

- o Remote controller for adjustment.
- o MSPG-925FS Pattern Generator. (Which has Video Signal: 7 Color Bar Pattern shown in Fig.3)

- (1) Input the PC **1024x768@60Hz** 7color Bar(MSPG-925, Model:3, Pattern:65) into RGB.(using D-sub to D-sub cable)
- (2) Set the PSM to Dynamic mode in the Picture menu.



(Fig.3)

- (3) Press **IN-START** key on R/C for adjustment.
- (4) Press the **G(Vol. +)** key to operate To set, then it becomes automatically.
- (5) Auto-RGB OK means the adjustment is completed.
- (6) Press the **G(Vol. +)** key to operate the set, then it becomes automatically.
- (7) Auto-RGB OK means the adjustment is completed.

7. Channel memory Setting Method

: Recovery the channel memory by adjust R/C.

- 1) Press ADJ key on R/C for adjustment.
- 2) Press VOL + key on "Channel Recover".

8. PCMCIA CARD Checking Method

: You must adjust DTV 29 Channel and insert PCMCIA CARD to socket.

- 1) If PCMCIA CARD works normally, normal signals display on screen. But it works abnormally, "No CA module" words display on screen.

* Befor power off, input mode must be changed RF mode.

Each PCB assembly must be checked by check JIG set.
(Because power PCB Assembly damages to PDP Module, especially be careful)

9. POWER PCB Assy Voltage Adjustments (Va, Vs Voltage adjustments)

9-1. Test Equipment : D.M.M. 1EA

9-2. Connection Diagram for Measuring : refer to Fig.4

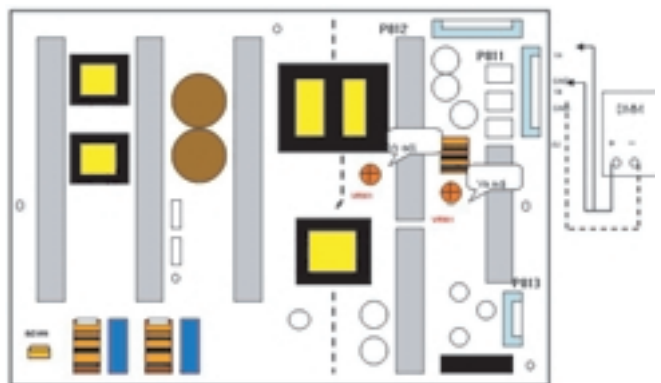
9-3. Adjustment Method

(1) Va Adjustment

- 1) After receiving 100% Full White Pattern, HEAT RUN.
- 2) Connect + terminal of D.M.M to Va pin of P811, connect - terminal to GND pin of P811.
- 3) After turning RV901, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top. (Deviation; $\pm 0.5V$)

(2) Vs Adjustment

- 1) Input signal : RF noise signal.
- 2) Connect + terminal of D.M.M to Vs pin of P811, connect - terminal to GND pin of P811.
- 3) After turning RV951, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top. (Deviation; $\pm 0.5V$)



(Fig.4) Connection diagram of power adjustment for measuring

8. EDID(The Extended Display Identification Data) /DDC(Display Data Channel) download

8-1. Required Test Equipment

- (1) Adjusting PC with S/W for writing EDID Data.
(S/W : EDID TESTER Ver.2.5)
- (2) A Jig for EDID Download.
- (3) Cable : Serial(9Pin or USB) to D-sub 15Pin cable, D-sub 15Pin cable, DVI to HDMI cable.

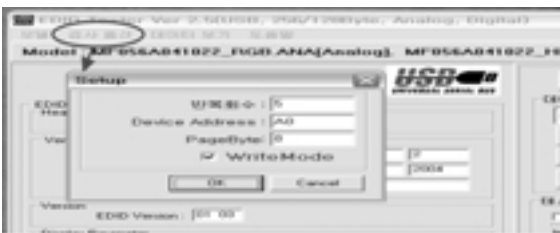
8-2. Required Test Equipment



(Fig.5) Connection Diagram of DDC download

8-3. Preparation for Adjustment

- (1) As above Fig.5, Connect the Set, EDID Download Jig, PC & Cable.
- (2) Turn on the PC & EDID Download Jig. And Execute the S/W : **EDID TESTER Ver.2.5**.
- (3) Set up S/W option.
Repeat Number : 5
Device Address : A0
PageByte : 8



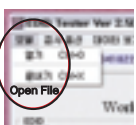
- (4) Power on the Set.

8-4. Sequence of Adjustment

- (1) EDID Download
 - 1) Init the data.

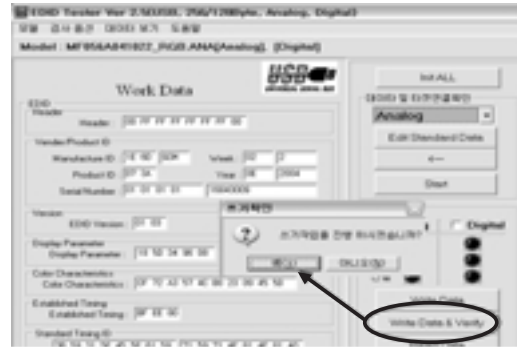


- 2) Load the EDID data.(Open File).



[Analog file] (for RGB)
[Digital file] (for HDMI)

- 3) Set the S/W as below.
- 4) Push the "Write Data & Verify" button. And confirm "Yes".
- 5) If the writing is finished, you will see the "OK" message.



- 6) If TV has two HDMI, you must download two times for each HDMI.

8-5. EDID DATA

- 1) Analog-RGB.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
10	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
20	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
30	30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F
40	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
50	50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
60	60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
70	70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F

=> Detail EDID Options are below([1],[2],[3],[4],[5])

- 1.[1]-Product ID

Model Name	Product ID	Product ID	
		Hex	EDID table
50PG6500	40013	9CB1	B19C

2. [2]-Serial No : Controlled on production line.
3. [3]-Month, Year : Controlled on production line.
ex) Monthly: '03' => '03'
Year : '2006' => '10'

4. [4]-Model Name : model name.

Model Name	Model Name(Hex)
50PG6500	00 00 00 FC 00 35 30 50 47 36 35 30 30 0A 20 20 20

5. [5]-Checksum (7EH) -> Changeable by total EDID data.

2) HDMI 1.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	8D	[1]		[2]			
10	[3]		01	03	00	46	27	70	EA	09	00	A3	57	49	9C	25
20	11	49	4B	A5	6E	00	31	40	45	40	81	40	D1	C0	01	01
30	01	01	01	01	01	01	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	C4	8E	21	00	00	1E	1B	21	50	A0	51	00	1E	30
50	48	88	35	00	BC	88	21	00	00	1C						
60	[4]															FD
70	00	32	4B	1C	43	0F	00	0A	20	20	20	20	20	20	01	[5]

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	03	21	F1	4E	02	11	01	03	12	13	04	14	05	21	1F
10	20	22	10	23	09	07	07	83	01	00	00	85	03	0C	00	10
20	00	01	1D	00	BC	52	00	1E	20	B8	28	55	40	C4	8E	21
30	00	00	1E	01	1D	00	72	51	00	1E	20	8E	28	55	00	C4
40	8E	21	00	00	1E	01	1D	80	00	72	1C	16	20	10	2C	25
50	80	C4	8E	21	00	00	9E	8C	0A	D0	90	20	40	31	20	0C
60	40	55	00	C4	8E	21	00	00	18	4E	1F	00	80	51	00	1E
70	30	40	80	37	00	BC	88	21	00	00	18	00	00	00	00	[5]

=> Detail EDID Options are below([1],[2],[3],[4],[5])

1.[1]-Product ID

Model Name	Product ID	Product ID	
		Hex	EDID table
50PG6500	40114	9CB2	B29C

2. [2]-Serial No : Controlled on production line.

3. [3]-Month, Year : Controlled on production line.

ex) Monthly: '03' => '03'

Year : '2006' => '10'

4. [4]-Model Name : model name.

Model Name	Model Name(Hex)
50PG6500	00 00 00 FC 00 35 30 50 47 36 35 30 30 0A 20 20 20 20

5. [5]-Checksum (7EH) -> Changeable by total EDID data.

3) HDMI 2.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	8D	[1]		[2]			
10	[3]		01	03	00	46	27	70	EA	09	00	A3	57	49	9C	25
20	11	49	4B	A5	6E	00	31	40	45	40	81	40	D1	C0	01	01
30	01	01	01	01	01	01	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	C4	8E	21	00	00	1E	1B	21	50	A0	51	00	1E	30
50	48	88	35	00	BC	88	21	00	00	1C						
60	[4]															FD
70	00	32	4B	1C	43	0F	00	0A	20	20	20	20	20	20	01	[5]

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	03	21	F1	4E	02	11	01	03	12	13	04	14	05	21	1F
10	20	22	10	23	09	07	07	83	01	00	00	85	03	0C	00	20
20	00	01	1D	00	BC	52	00	1E	20	B8	28	55	40	C4	8E	21
30	00	00	1E	01	1D	00	72	51	00	1E	20	8E	28	55	00	C4
40	8E	21	00	00	1E	01	1D	80	00	72	1C	16	20	10	2C	25
50	80	C4	8E	21	00	00	9E	8C	0A	D0	90	20	40	31	20	0C
60	40	55	00	C4	8E	21	00	00	18	4E	1F	00	80	51	00	1E
70	30	40	80	37	00	BC	88	21	00	00	18	00	00	00	00	[5]

=> Detail EDID Options are below([1],[2],[3],[4],[5])

* Please refer HDMI 1

- EDID Download is needed HDMI 1~ HDMI 4.

* Befor adjusting White-balance, the AV ADC should be done.
If ADC status were "NG", Need to ADC adjustment.

9. Adjustment of White Balance

9-1. Required Equipment

- (1) Remote control for adjustment.
- (2) Color Analyzer : CA-100+, CA210 or same product.
- CH : 10
- (3) Auto W/B adjustment instrument.(only for Auto adjustment)
- (4) AV Pattern Generator.

w Color temperature standards according to CSM and Module.

CSM	PLASMA	Remark
Cool	11000K	
Normal	9300K	
Warm	6500K	

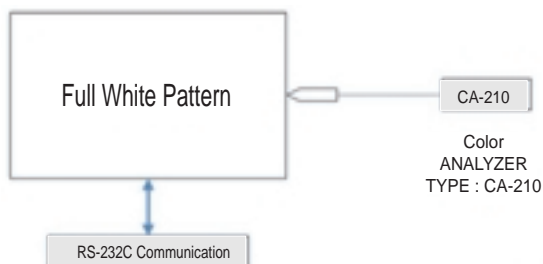
w CS-1000/CA-100+/CA-210(CH 10) White balance adjustment coordinate and color temperature.

CSM	Color Coordinate		Temp	Δuv
	x	y		
COOL	0.276±0.002	0.283±0.002	11,000K	0.000
MEDIUM	0.285±0.002	0.293±0.002	9,300K	0.000
WARM	0.313±0.002	0.329±0.002	6,500K	0.003

* PC(for communication through RS-232C)
-> UART Baud rate : 115200 bps

9-2. Connection Picture of the Measuring Instrument(On Automatic control)

- (1) Inside PATTERN is used when W/B is controlled. Connect to auto controller or push control R/C IN-START -> Enter the mode of White-Balance, the pattern will come out.



(Fig.6) Auto AV(CVBS) Color Balance Test Pattern

9-3. Auto-control interface and directions

- (1) Adjust in the place where the influx of light like floodlight around is blocked.(illumination is less than 10ux)
- (2) Measure and adjust after sticking the Color Analyzer(CA-100+, CA210) to the side of the module.
- (3) Aging time
 - After aing start, keep the power on(no suspension of power supply) and heat-run over 15minutes.
 - keep white pattern using inside pattern.

√ Auto adjustment Map(RS-232C)

Type		PD82A				
Baud Rate		Data bit		Stop bit	Parity	
115200		8		1	NONE	
Protocol Setting	Index	Cmd1	Cmd2	Data	Min Value	Max Value
	R Gain	j	a		00(00)	128(80)
	G Gain	j	b		00(00)	128(80)
	B Gain	j	c		00(00)	128(80)
	R Offset	j	d		00(00)	128(80)
	G Offset	j	e		00(00)	128(80)
	B Offset	j	f		00(00)	128(80)

10. Adjustment of White Balance

(Manual white Balance)

- √ One of R Gain/ G Gain/ B Gain should be kept on 80, and others are controlled lowering from 80
- (1) Press 'power on' of the control R/C, set heat run to white by pressing and heat run over 15 minutes.(Set: RS-232 Host: PC, Baud Rate: 115200bps, Download: Cortez)
- (2) Zero Calibrate CA-100+, and stick the sensor to the center of PDP module surface when you adjust.
- (3) Double click In-start key on Controlling R/C and get in 'white balance'.
- (4) Set test-pattern on and display inside pattern. Control is carried out on three color temperature, COOL, MEDIUM, WARM. (Control is carried out three times.)
- (5) When the R/G/B GAIN is 80 on OSD, it is the FULL DYNAMIC Range of the Module. In order to control white balance without the saturation of FULL DYNAMIC Range and DATA, one of R Gain / G Gain / B Gain should be kept on 80, and other two is controlled lowering from 80.

* Color Temperature: Cool, Medium, Warm

- (1) When R GAIN is set to 80
 - Control G GAIN and B GAIN by lowering from 80.
 - (2) When B GAIN is set to 80
 - Control R GAIN and G GAIN by lowering from 80.
 - (3) When G GAIN is set to 80
 - Control R GAIN and B GAIN by lowering from 80.
- One of R Gain / G Gain / B Gain should be kept on 80, and adjust other two lower than 80.
(When R/G/B GAIN are all 80, it is the FULL DYNAMIC Range of Module)

11. Input the Shipping Option Data

- 1) Push the IN-START key in a Adjust Remocon.
- 2) Input the Option Number that was specified in the BOM, into the Shipping area.
- 3) The work is finished, Push √ Key.

12. Default Value in Adjustment mode

12-1. Auto Color Balance

<Component>			<RGB>		
AutoColor Balance(Hex)			AutoColor Balance(Hex)		
Auto-RGB ▶ To Set			Auto-RGB ▶ To Set		
Source	MAIN		Source	MAIN	
Red	Offset1	022	Red	Offset1	0F8
Green	Offset1	024	Green	Offset1	0DA
Blue	Offset1	023	Blue	Offset1	0BC
Red	Offset2	45	Red	Offset2	01
Green	Offset2	43	Green	Offset2	01
Blue	Offset2	37	Blue	Offset2	01
Red	Gain	014	Red	Gain	1FE
Green	Gain	031	Green	Gain	1FE
Blue	Gain	011	Blue	Gain	1FE

<AV>

AutoColor Balance(Hex)		
Auto-RGB ▶ To Set		
Source	MAIN	
Red	Offset1	022
Green	Offset1	024
Blue	Offset1	023
Red	Offset2	45
Green	Offset2	43
Blue	Offset2	37
Red	Gain	014
Green	Gain	031
Blue	Gain	011

(Fig. 7) Default on OSD

12-2. Write Balance

White Balance(Hex)		
Red	Gain	80
Green	Gain	80
Blue	Gain	80
Red	Offset	80
Green	Offset	80
Blue	Offset	80
Reset	▶ To Set	

(Fig. 8) Default on OSD

13. EEPROM Data Write(Serial No D/L)

13-1. Signal TABLE

CMD	LENGTH	ADH	ADL	DATA_1	...	DATA_n	CS	DELAY
-----	--------	-----	-----	--------	-----	--------	----	-------

CMD : A0h
 LENGTH : 85~94h (1~16 bytes)
 ADH : E²PROM Sub Address high (00~1F)
 ADL : E²PROM Sub Address low (00~FF)
 Data : Write data
 CS : CMD + LENGTH + ADH + ADL + Data_1 + ... + Data_n
 Delay : 20ms

13-2. Command Set

No	Adjust mode	CMD(hex)	LENGTH(hex)	Description
1	EEPROM WRITE	A0h	84h+n	n-byted Write (n=1~16)

* Description

FOS Default write : <7mode data> write

Vtotal, V_Frequency, Sync_Polarity, Htotal, Hstart, Vstart, 0, Phase

Data write : Model Name and Serial Number write in EEPROM,.

13-3. Method & Notice

- (1) Serial number D/L is using of scan equipment.
- (2) Setting of scan equipment operated by Manufacturing Technology Group.
- (3) Serial number D/L must be conformed when it is produced in production line, because serial number D/L is mandatory by D-book 4.0.

14. Set Information (Serial No& Model name, Option Table)

14-1. Setting up 'Tool Option1,2' (After setting white balance, this is set)

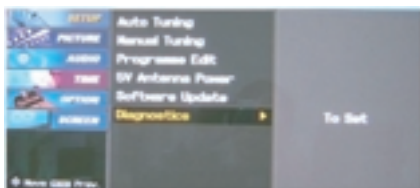
(Setting: Press ADJ Key in the Adjust remoon)

- (1) Press ADJ Key in the R/C for adjustment.
- (2) Insert Option value by a number key.
- (3) Press the Enter Button.

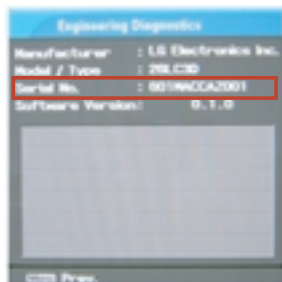
Model Name	Tool Option1	Tool Option2	Area Option	Option1	Option2	Option3	Option4
42PG6500	10240	1697	0	14	2	1	192

14-2. Check the serial number & Model Name

- (1) Push the menu button in DTV mode.
- Select the STATION-> Diagnostics -> To set.



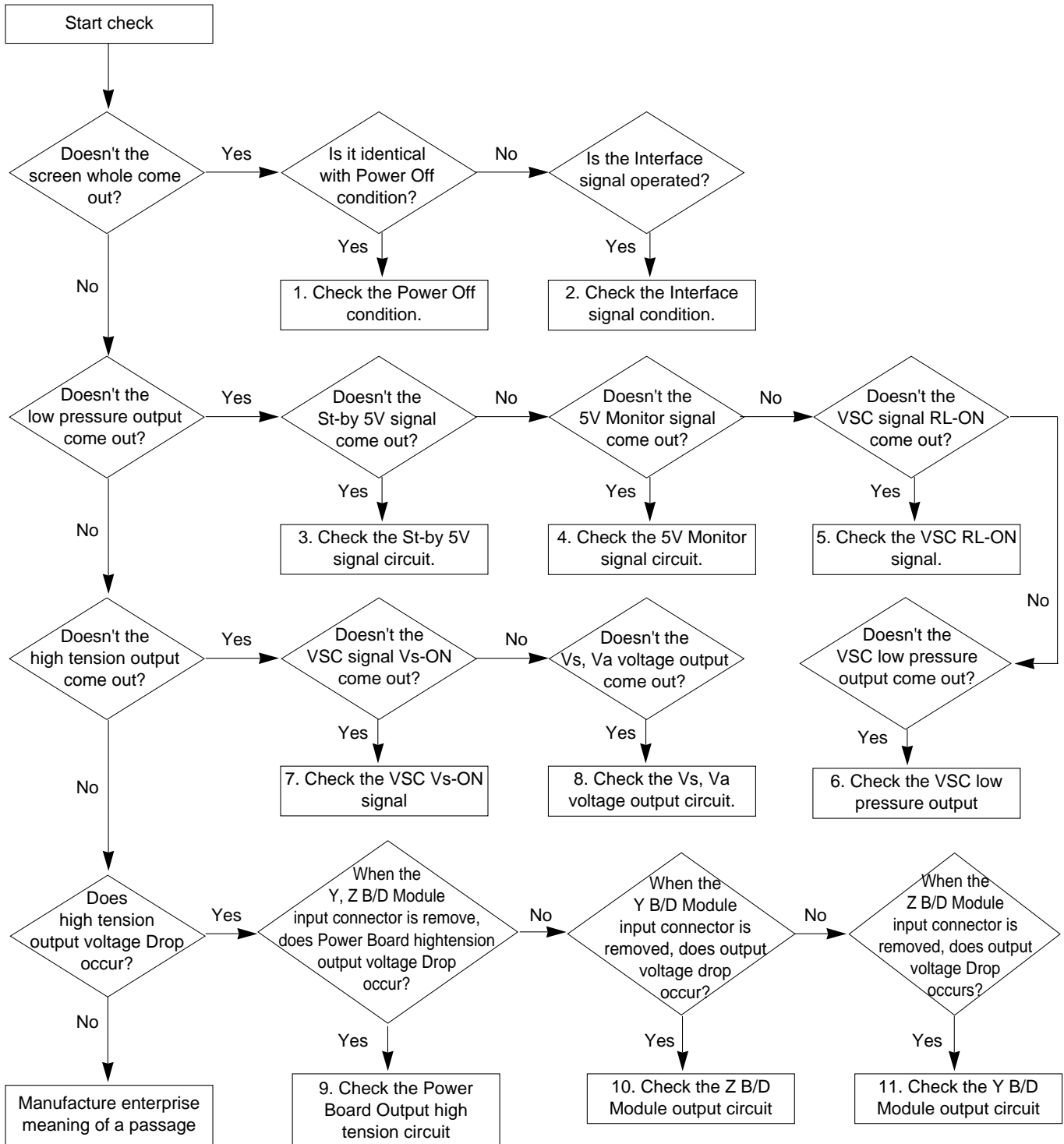
- (2) Check the Serial Number.



TROUBLE SHOOTING GUIDE

1. Power Board

1-1. The whole flowchart which it follows in voltage output state



1-2. 50” Power Board Structure

(1) Pin Layout



(2) Pin Spec

NO	AC INLET	MAIN BOARD	PDP MODULE	
	SC101	P813	P811	P812
1	AC	16V	Vs	Vs
2	NC	GND	Vs	Vs
3	AC	12V	NC	NC
4		GND	GND	GND
5		5VSC	GND	GND
6		5VSC	Va	Va
7		GND	Va	Va
8		GND	GND	GND
9		5V_MNT	M5V	M5V
10		RL_ON	M5V	M5V
11		M5V_ON		
12		M5V_ON		
13		GND		
14		GND		
15		GND		
16		GND		
17		5V_MNT		
18		AC_DET		
19		RL_ON		
20		VS_ON		
21		M5V_ON		
22		AUTO_GND		
Description	YH396-03	SMH200-22P	YH396-10P	YH396-10P

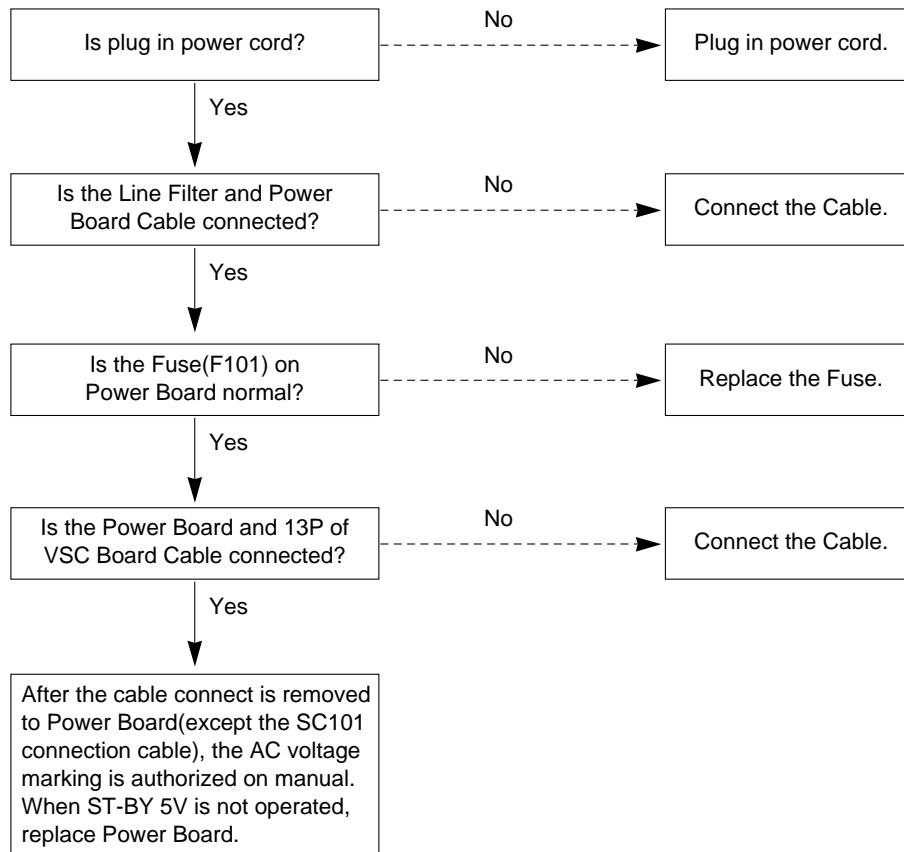
2. No Power

(1) Symptom

- 1) Doesn't minute discharge at module.
- 2) Non does not come in into the front LED.



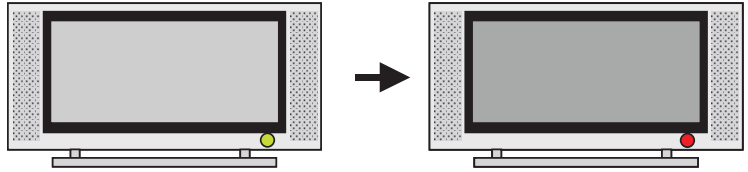
(2) Check following



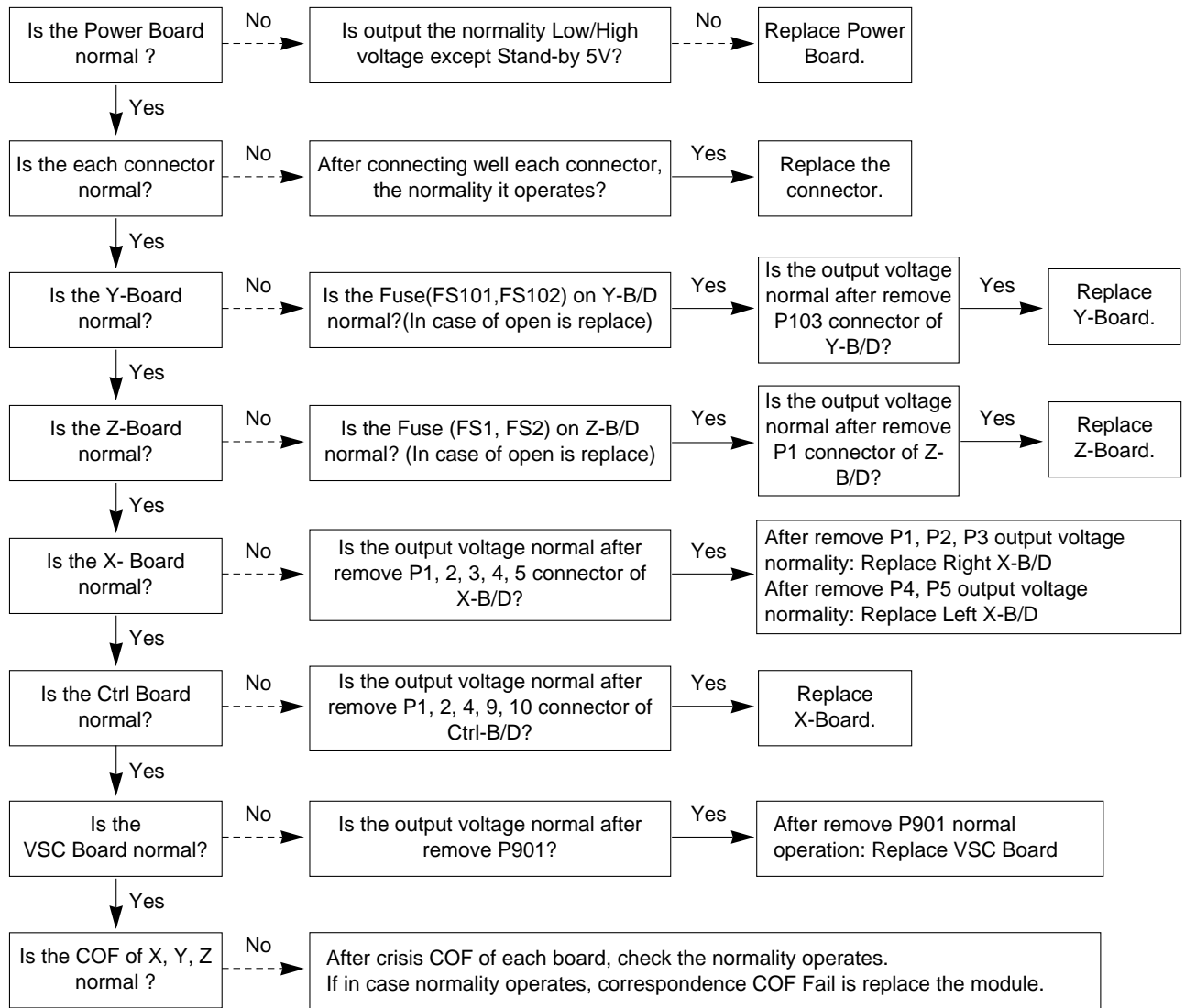
3. Protect Mode

(1) Symptom

- 1) After once shining, it does not discharge minutely from module.
- 2) The Rely falls.(The sound is audible "click")
- 3) It is converted with the color where the front LED is red from green.



(2) Check following



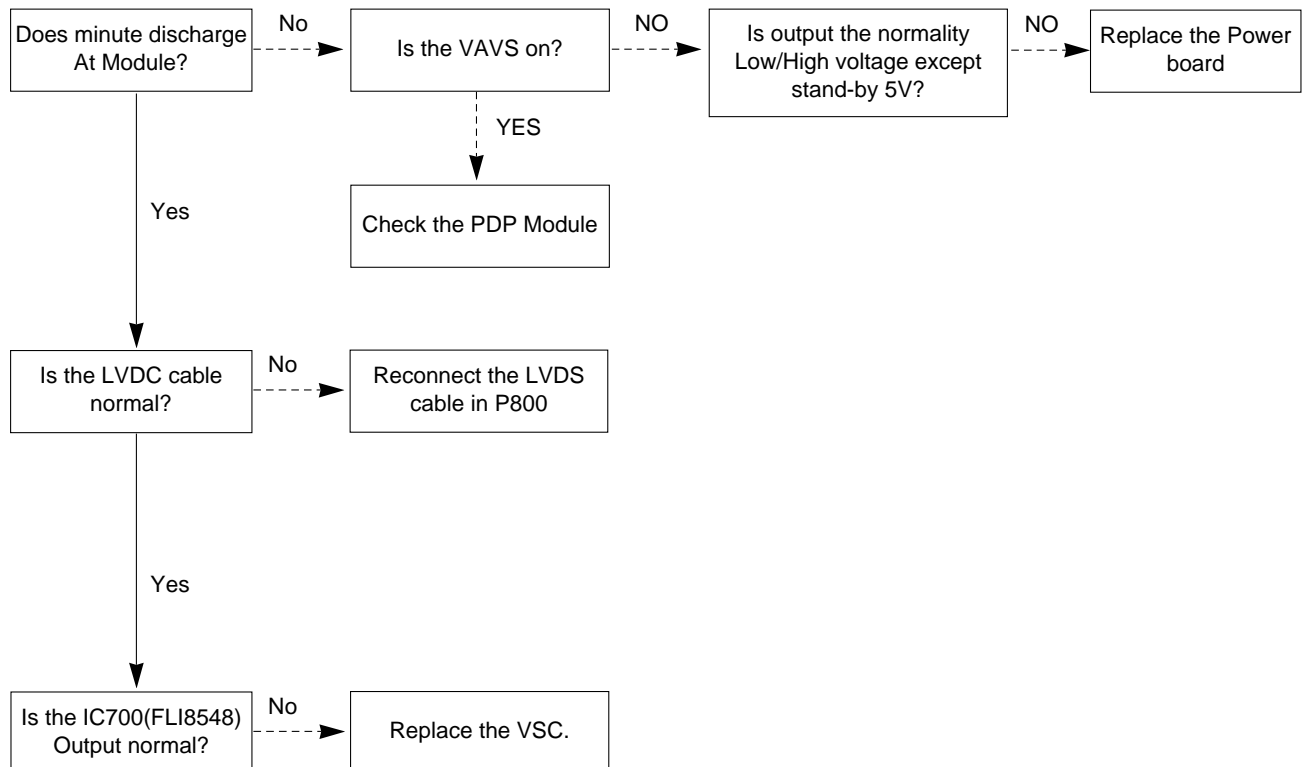
4. No Raster

(1) Symptom

- 1) No OSD and image occur at screen.
- 2) It maintains the condition where the front LED is green.



(2) Check following



5. In case of occurring strange screen into specific mode

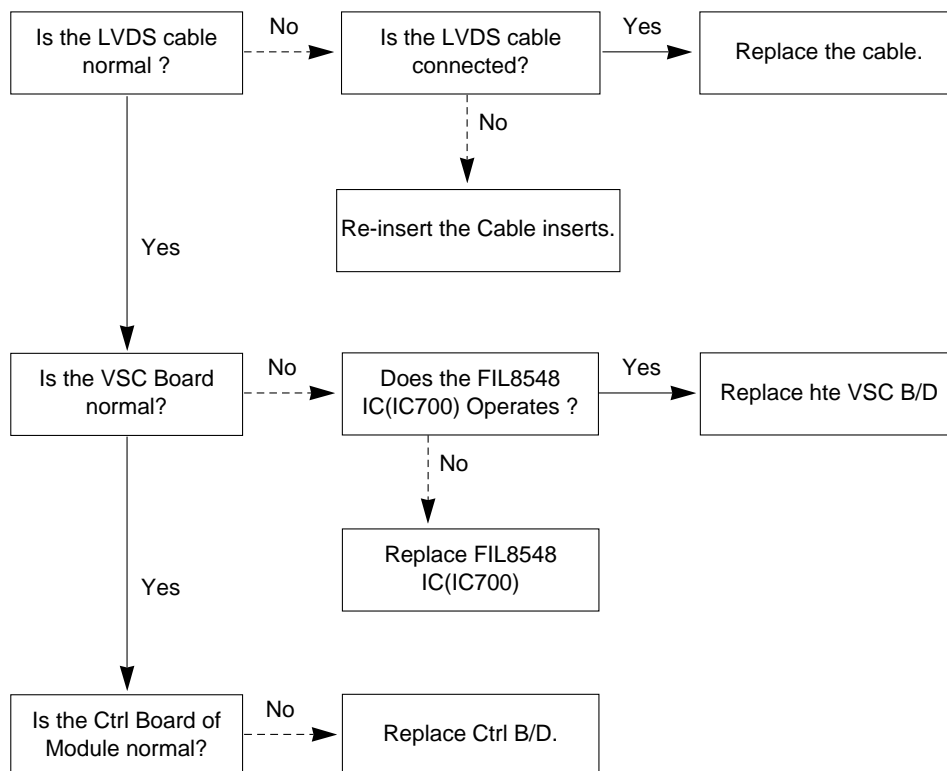
5-1. In case the OSD does not displayed

(1) Symptom

- 1) LED is green.
- 2) The minute discharged continuously becomes Accomplished from module.



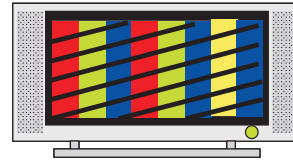
(2) Check following



5-2. In case of does't display the screen into specific mode

(1) Symptom

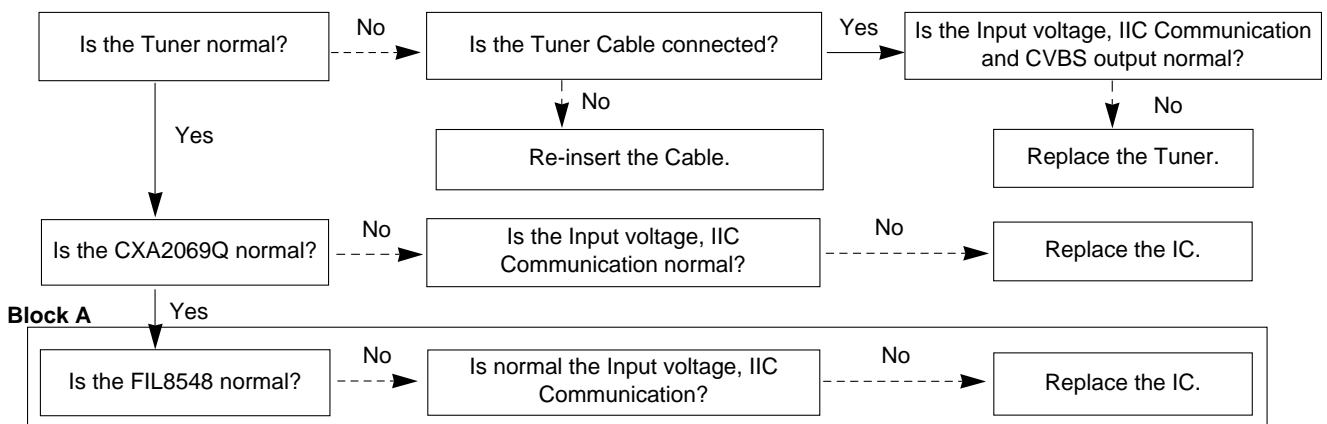
- 1) The screen does not become the display from specific input mode (RF, AV, Component, RGB, DVI).



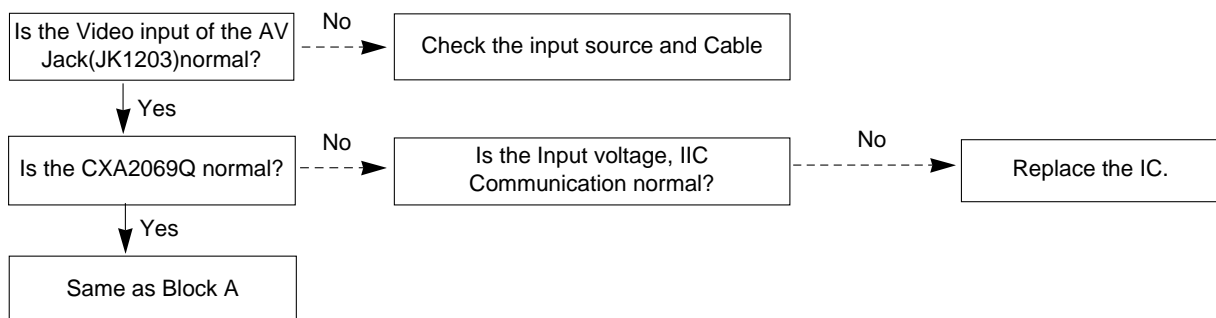
(2) Check following

- 1) Check the all input mode should become normality display.

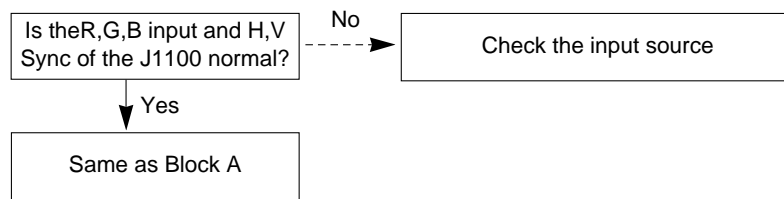
(3) In case of becomes unusual display from RF mode



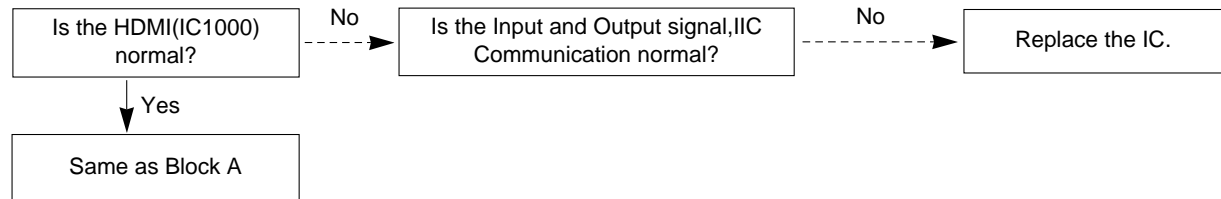
(4) In the case of becomes unusual display from side S-video/AV mode



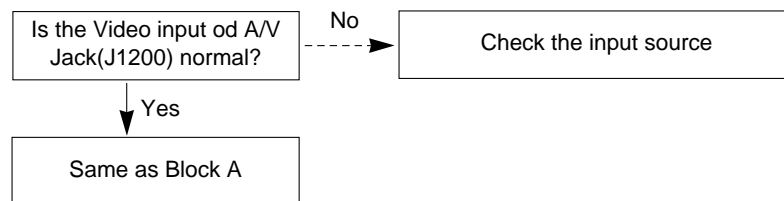
(5) In the case of becomes unusual display from Component, RGB mode



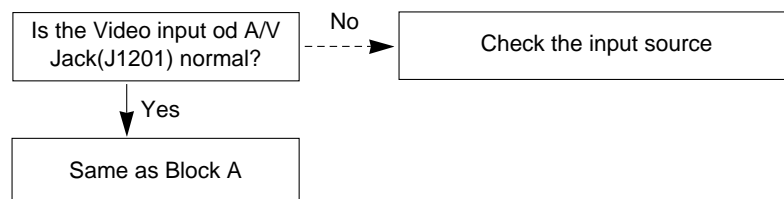
(6) In the case of becomes unusual display from HDMI mode



(7) In the case of becomes unusual display from SCART1 mode



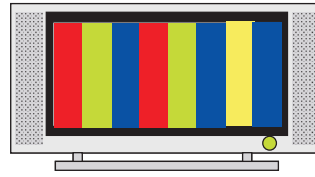
(8) In the case of becomes unusual display from SCART2 mode



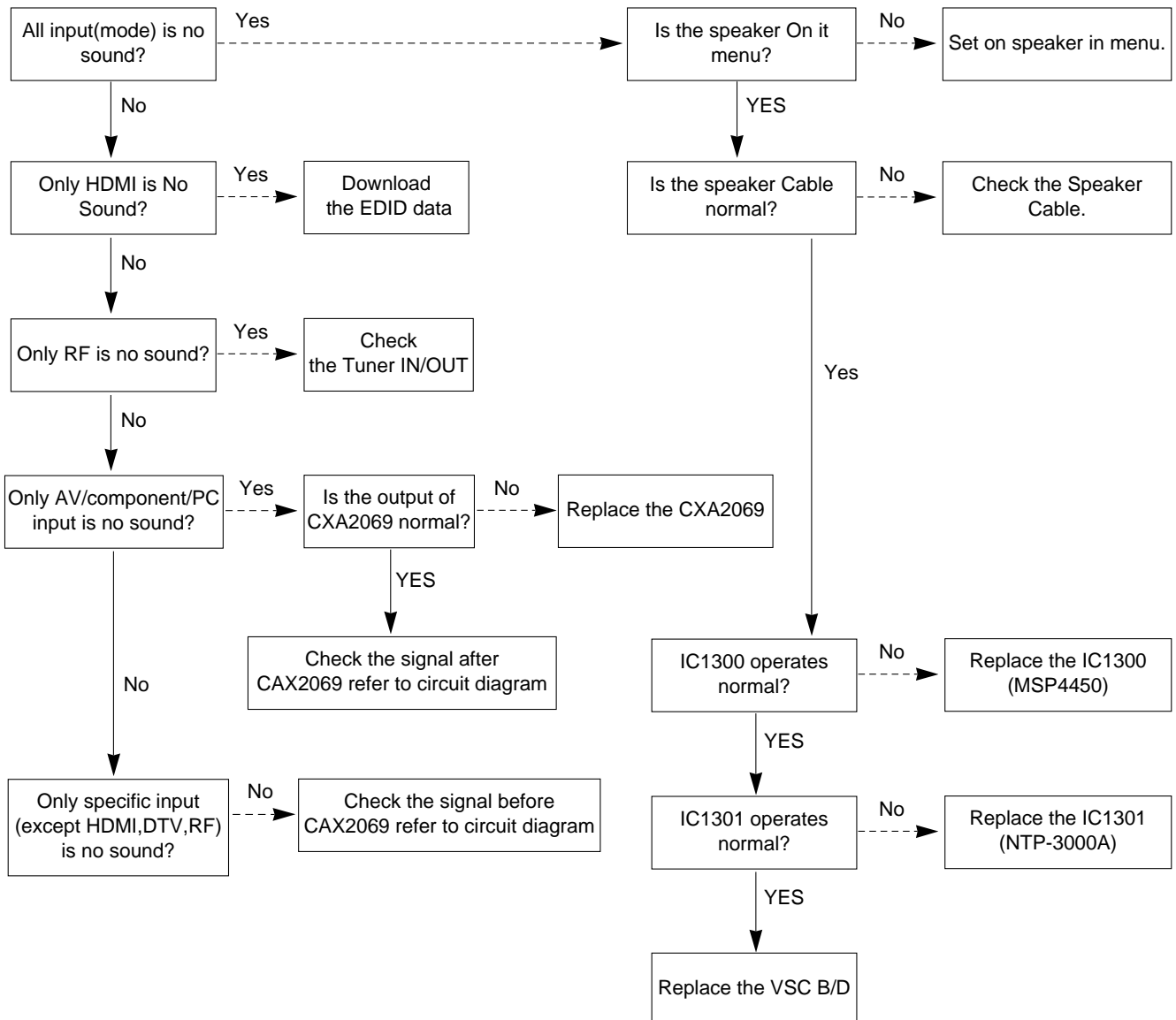
6. In case of no sound

(1) Symptom

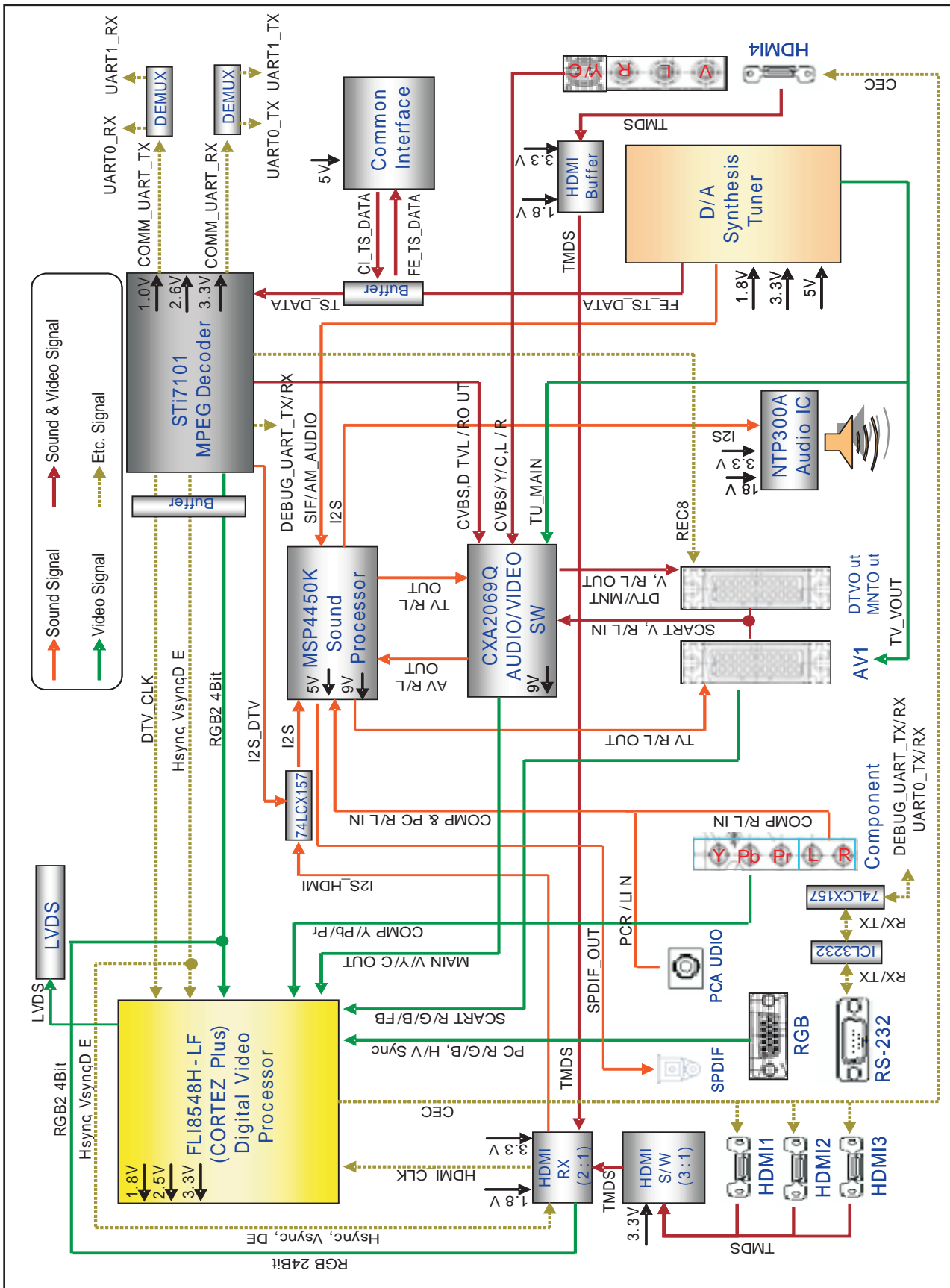
- 1) LED is Green.
- 2) Screen display but sound is not output.



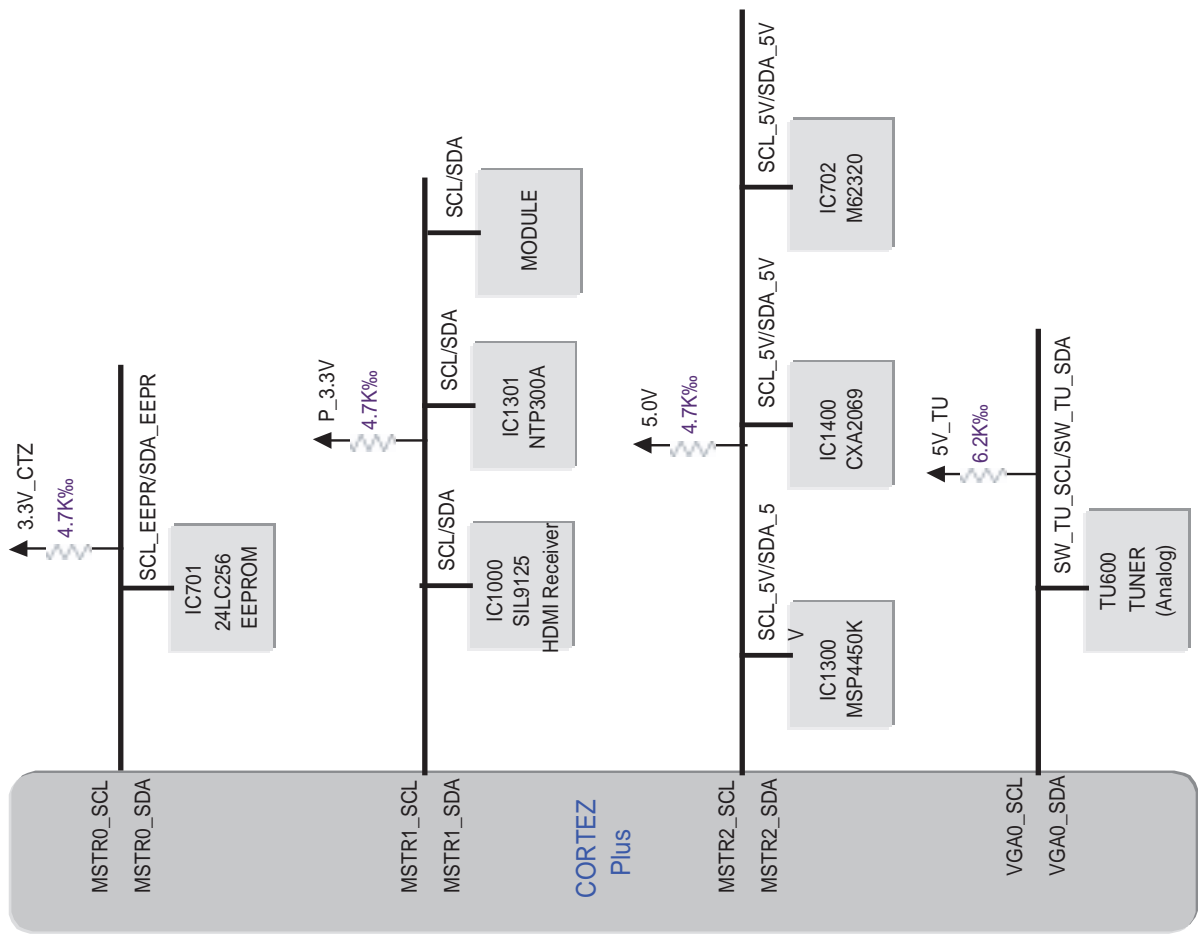
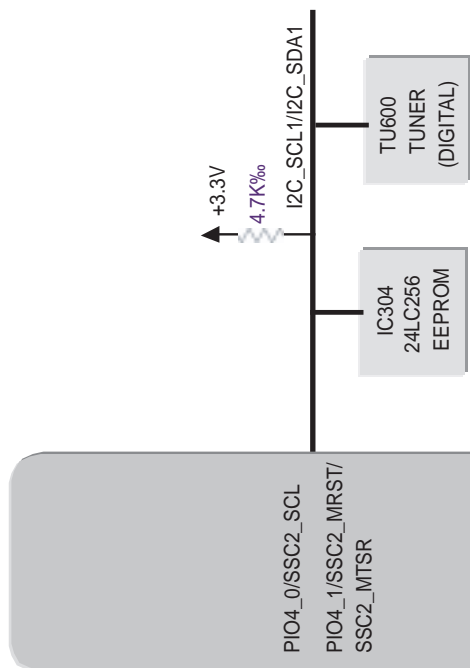
(2) Check following



BLOCK DIAGRAM



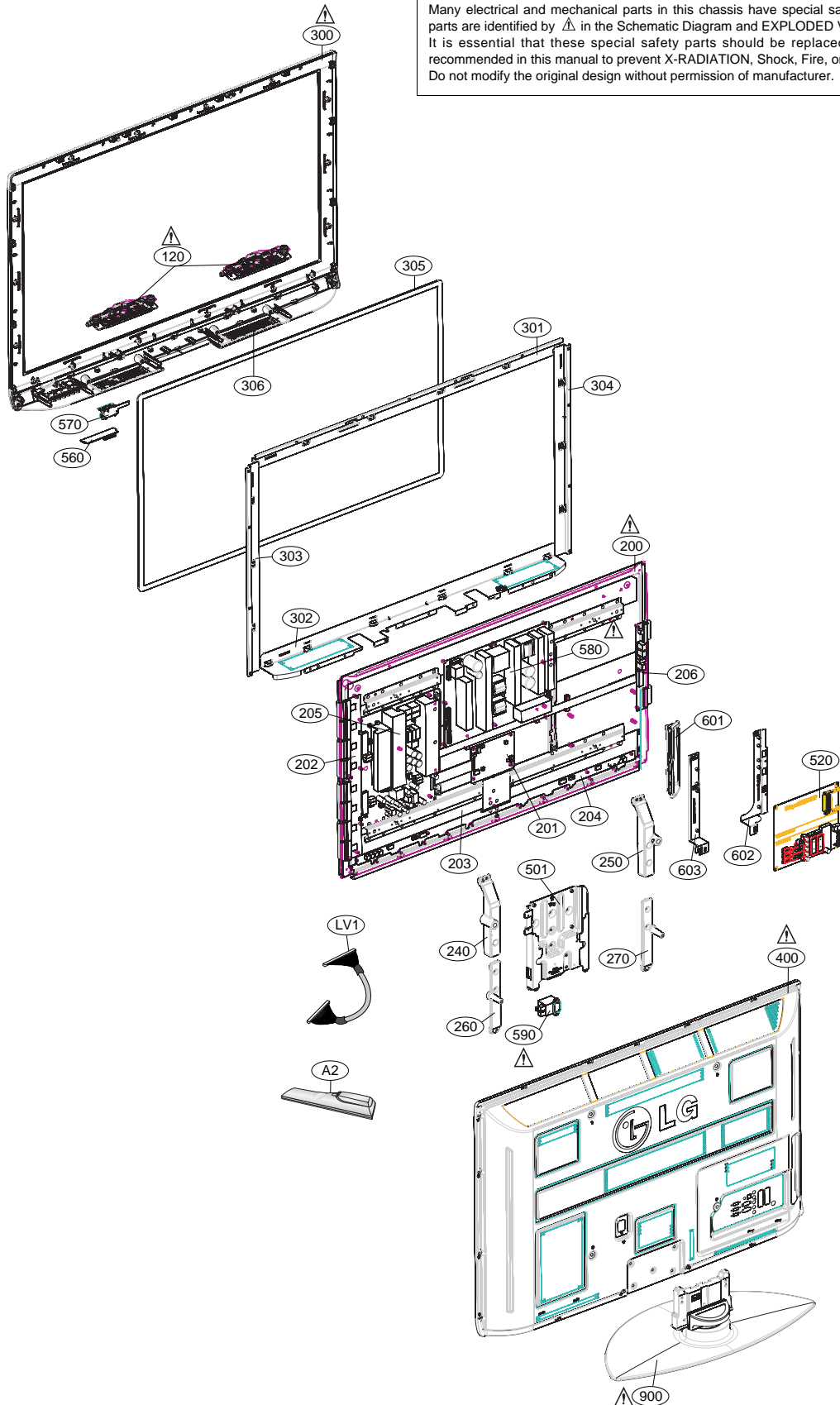
IIC Line



EXPLODED VIEW

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by \triangle in the Schematic Diagram and EXPLODED VIEW. It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards. Do not modify the original design without permission of manufacturer.



[illegible]

4. I2S & ETC

AUD-ANAL-
AUD-ANAL+
AUD-ANALR-
AUD-ANALR+
AUD-ANAL-VBS

DTV-LOUT
DTV-ROUT

I2S SWITCHING (DTV&HDMI)

TO MSP

OPTION
ST UART FOR DEBUG

±3.3V-SWITCH

% MUST BE PLACED NEAR IC100

[SCART PIN8]

SPDIF OPTIC JACK
OPTION

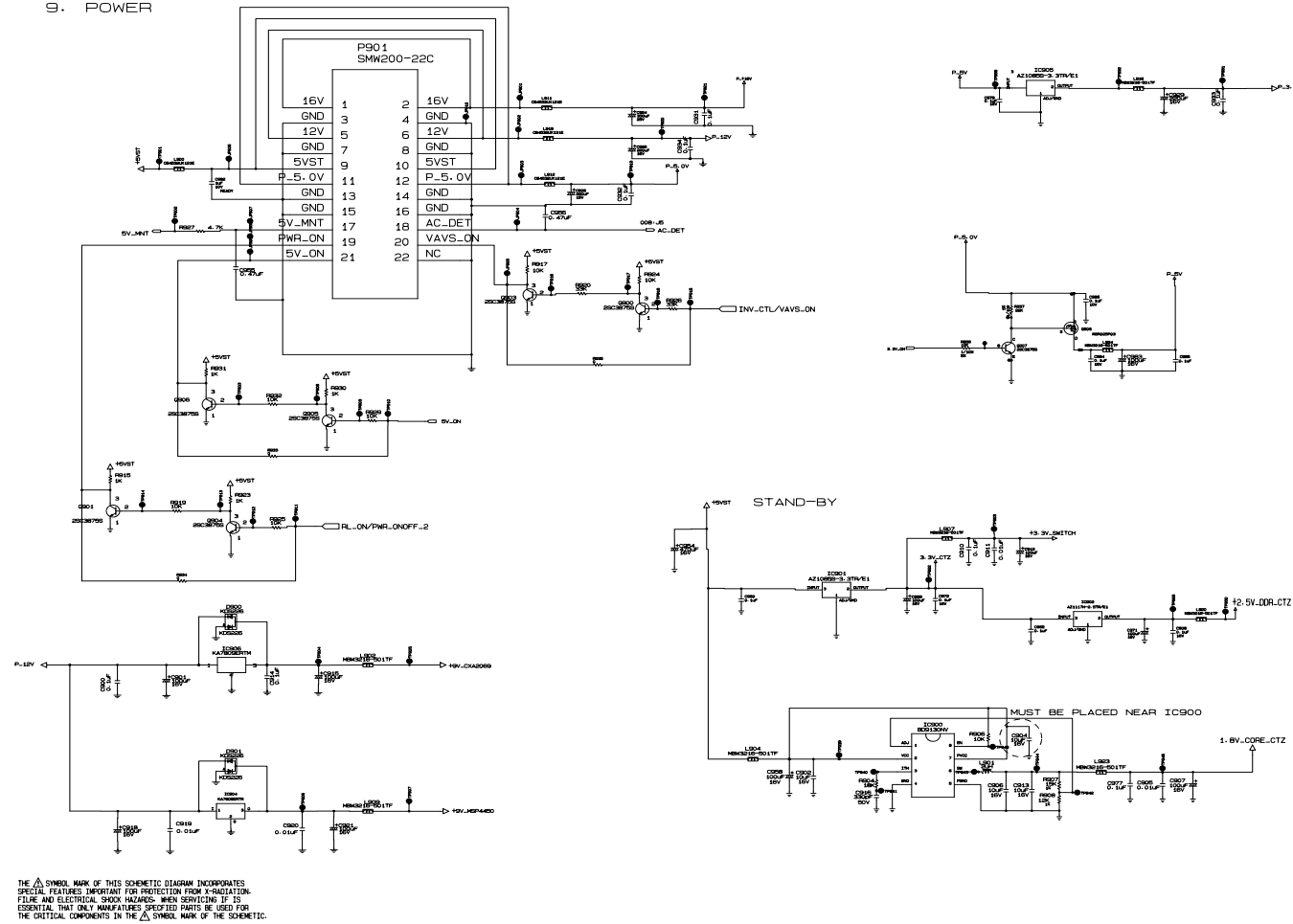
THE Δ SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FUSE AND ELECTRICAL SHOCK MARKING WHEN REMOVING IS ESSENTIAL. THAT ONLY MANUFACTURER SPECIFIED PARTS BE USED FOR THE OPTICAL COMPONENTS IN THE Δ SYMBOL MARK OF THE SCHEMATIC.

The image displays a series of schematic diagrams for different power supply sections:

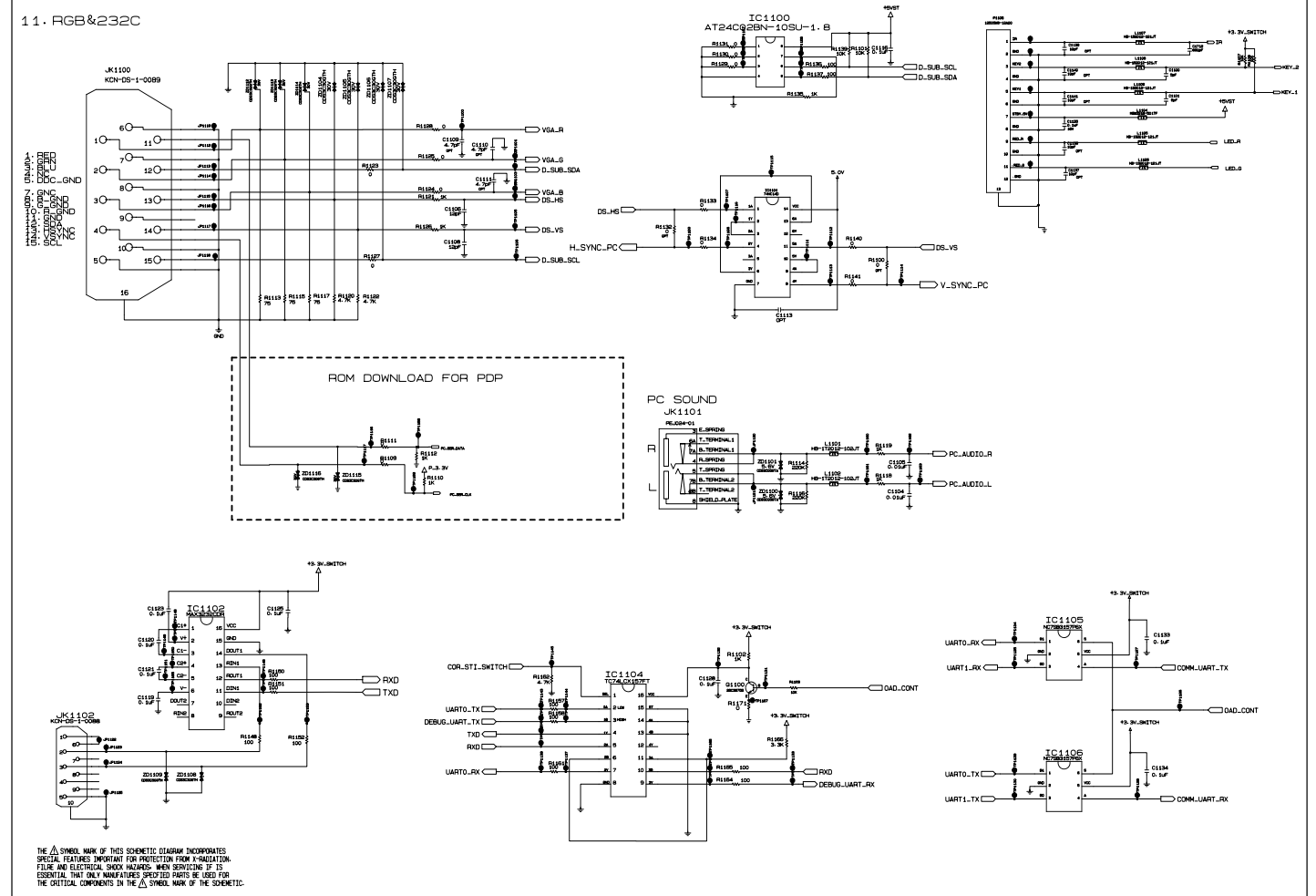
- 3.3 volt**: A schematic showing a voltage regulator IC (likely a 3.3V LDO) with input and output capacitors.
- STx7101-Ext Core 2.5V**: A schematic for a 2.5V core supply, featuring a buck converter or similar switching regulator.
- STx7109-Ext core 1.13volt**: A schematic for a 1.13V core supply, also using a buck converter topology.
- 3.3V_TUNER** and **1.8V_TUNER**: Schematics for tuner-specific power rails, each using a dedicated voltage regulator.
- 5.0 volt**: A schematic for a 5.0V rail, possibly a pre-regulator or a specific LDO.
- 5.0V For only C.I.**: A note indicating over-current protection can be operated for this rail.
- 3.3 volt for HDMI**: A schematic for an HDMI-related 3.3V supply.
- 1.8V for HDMI**: A schematic for an HDMI-related 1.8V supply, split into 1.8V_HDMI and 1.8V_AMP.
- Other regulators**: Several smaller schematics for specialized rails such as DCR_VREF, V_DCR_VREF, and others, often using precision op-amp-based regulators.

A disclaimer at the bottom states: "THE Δ SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM RADIATION, FLAME AND ELECTRICAL SHOCK HAZARDS. WHEN REPRODUCING IT IS ESSENTIAL THAT ONLY MANUFACTURER-SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE Δ SYMBOL MARK OF THE SCHEMATIC."

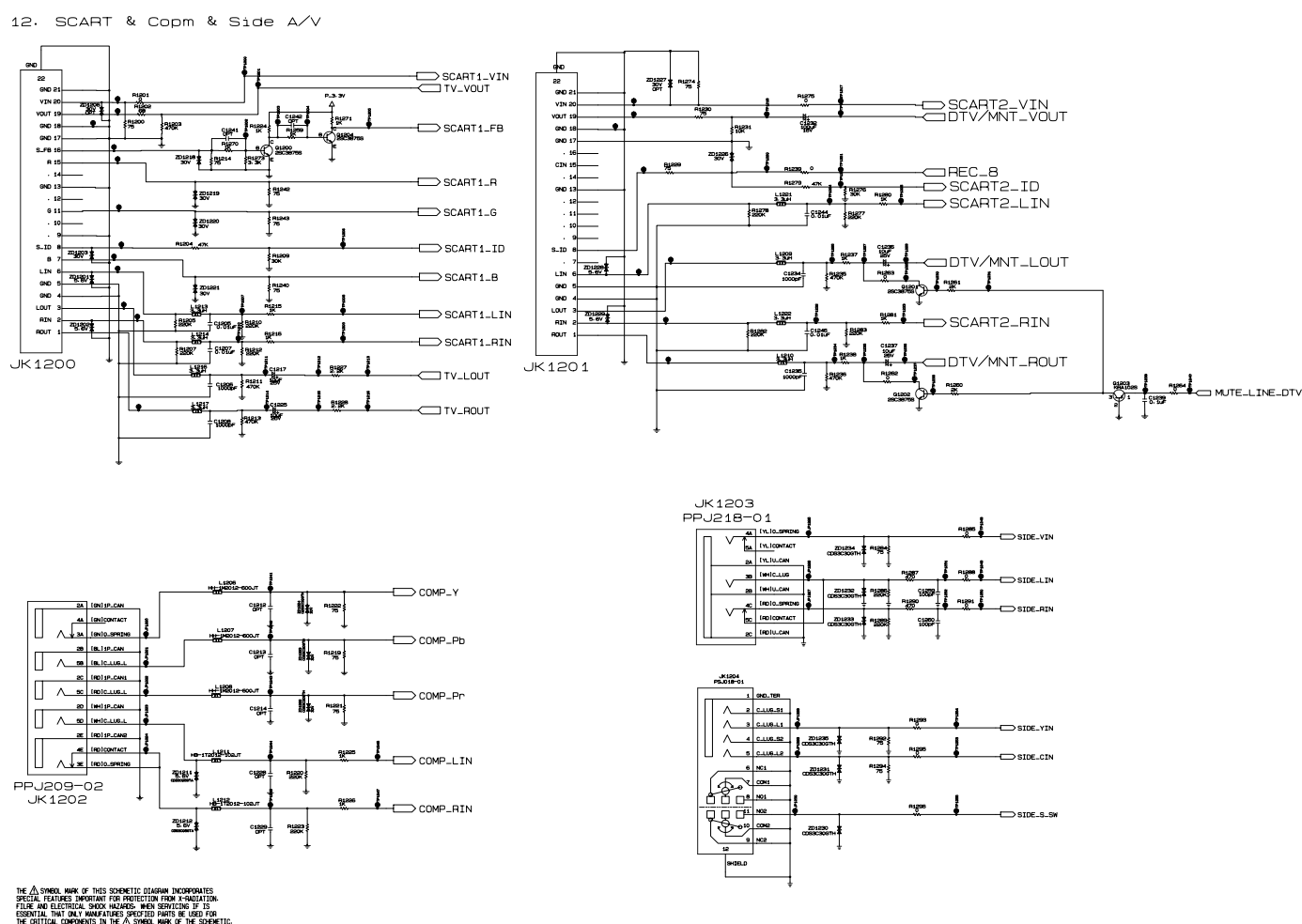
9. POWER



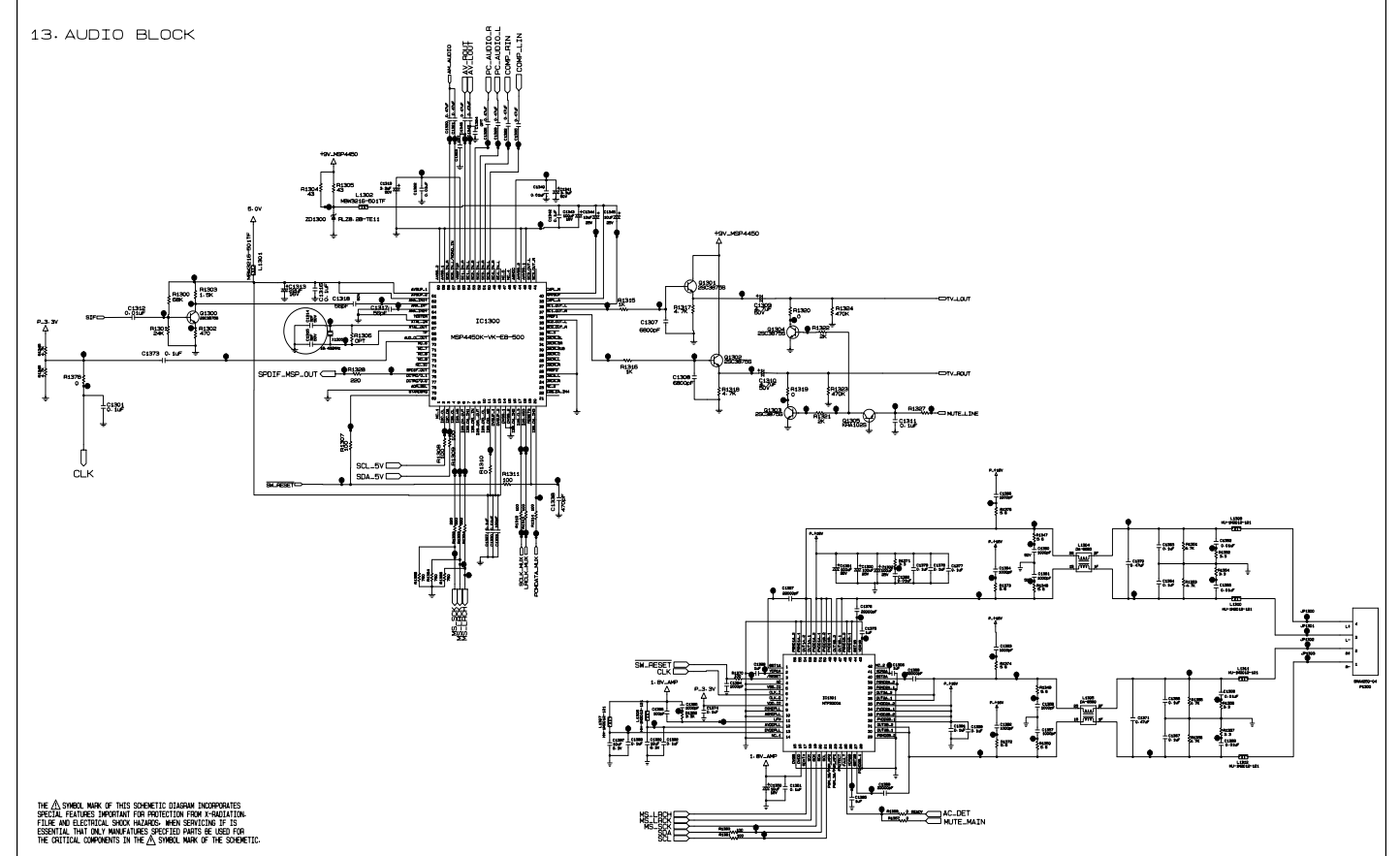
11. RGB&232C



12. SCART & Copm & Side A/V



13. AUDIO BLOCK



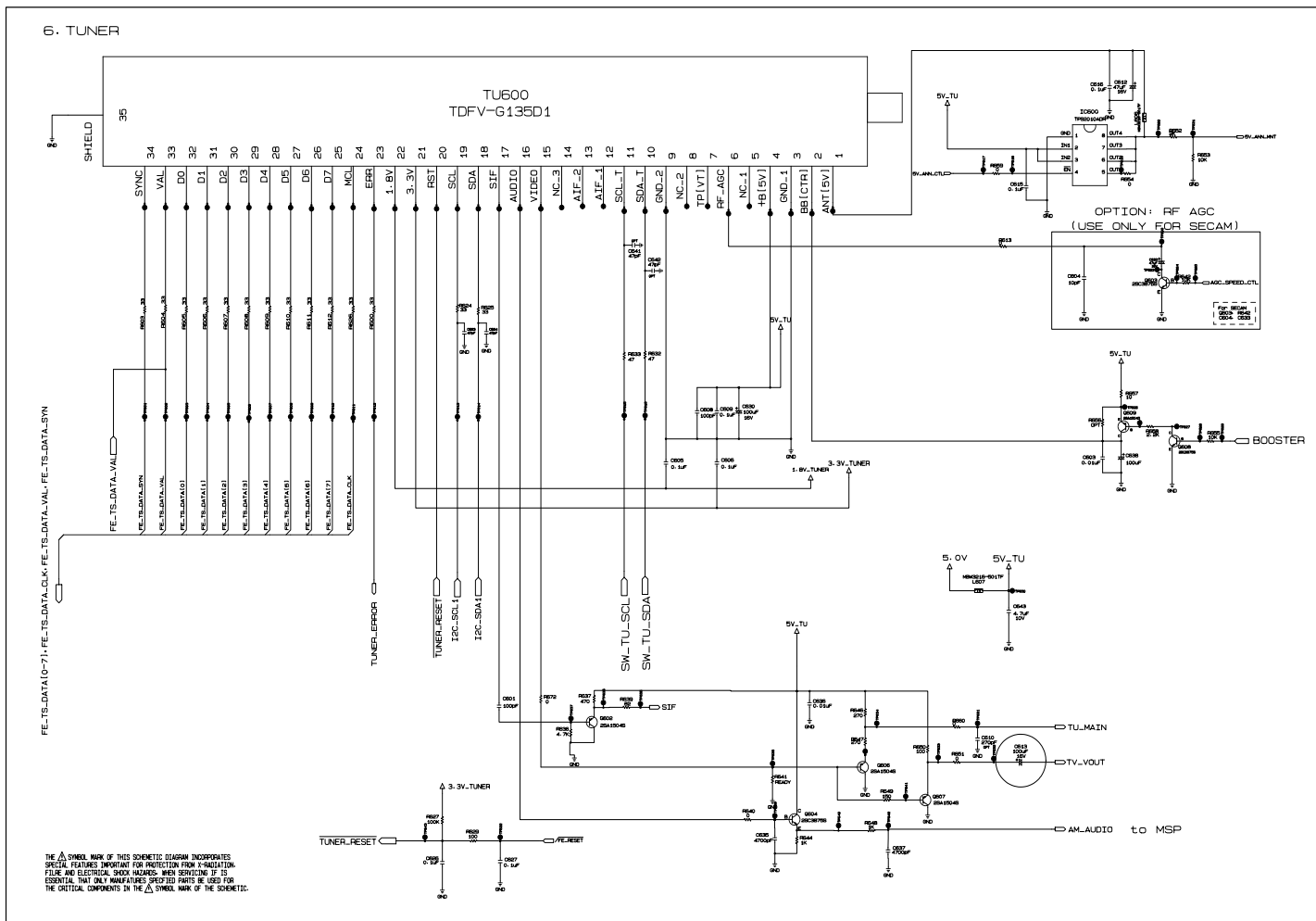
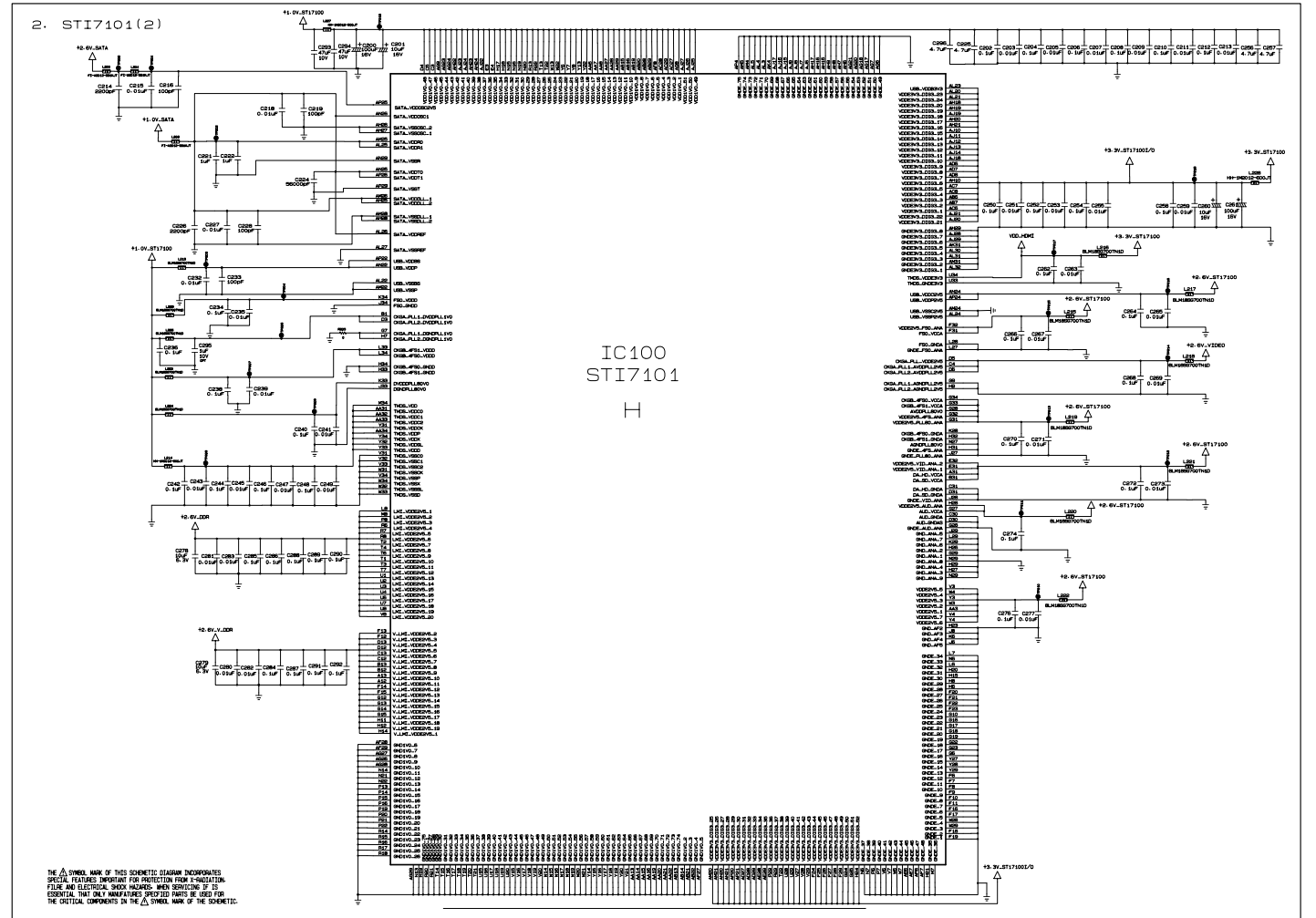
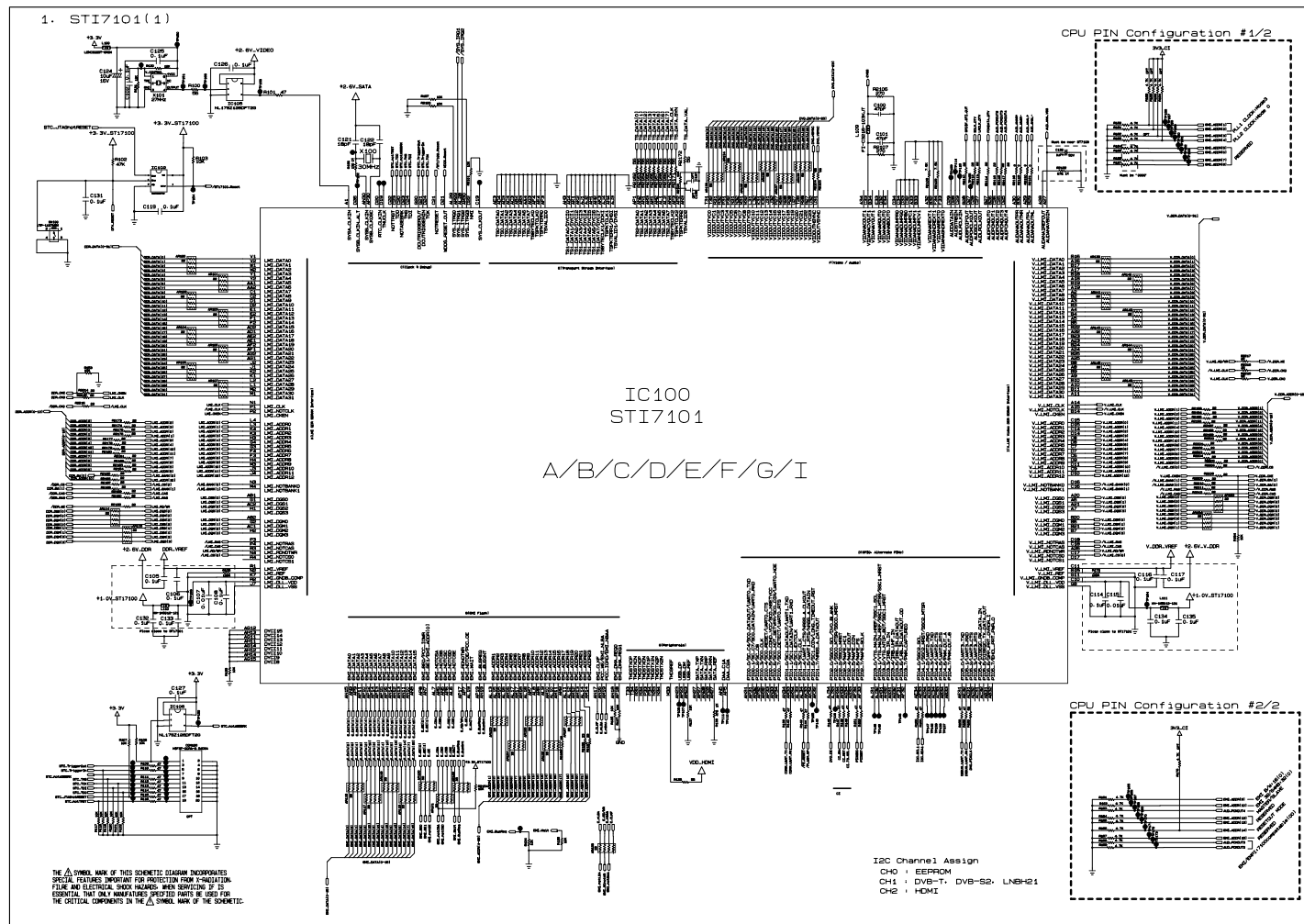


Figure 14 is a schematic diagram of a 16-bit parallel adder circuit. The circuit consists of a 16-bit parallel adder block with inputs A[15:0] and B[15:0], and outputs S[15:0]. The adder block is represented by a rectangle with a plus sign inside. The inputs are connected to the left side of the block, and the outputs are connected to the right side. The adder block is labeled "16-BIT PARALLEL ADDER".

Figure 1 is a schematic representation of the experimental design. It shows two parallel sequences of trials for two groups: 'No feedback' and 'Feedback'. The 'No feedback' group starts with 20 trials (indicated by a box with a feedback icon), followed by 50 trials, 70 trials, 90 trials, 10 trials, 30 trials, 50 trials, and 70 trials. The 'Feedback' group starts with 20 trials (indicated by a box with a feedback icon), followed by 50 trials, 70 trials, 90 trials, 10 trials, 30 trials, 50 trials, and 70 trials. A legend at the bottom indicates that a box with a feedback icon represents 'Feedback' and a box with a question mark represents 'No feedback'.



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